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## AFRICAN MUSCIDAE.—IV (DIPTERA)

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In this contribution keys are contained for the identification of several genera of Muscidae, together with notes and descriptions. Unless otherwise stated the types are in The American Museum of Natural History.

### LISPE LATREILLE

LATREILLE, 1796, 'Prec. d. Caract. génér. d. Ins.,' p. 169.

BECKER, 1904, Zeits. Ent., Breslau, XXIX, pp. 1-70.

ALDRICH, 1913, Journ. N. Y. Ent. Soc., XXI, p. 126.

During recent years the name of this genus has been spelled *Lispa*, following Becker, instead of *Lispe* as originally proposed. In 1904, Becker reviewed the Palaearctic species, many of which occur in Africa, and in 1913, Aldrich revised the North American species. The genus may be easily recognized by the spatulate palpi and the presence of hairs on the middle of the pteropleura, this part of the thorax being otherwise bare.

In the preparation of the following key to the species recorded from Africa I have had to rely to a large extent upon descriptions and have omitted most of the species occurring in North Africa and those too poorly described to be included.

### TABLE OF SPECIES

- |   |                            |
|---|----------------------------|
| 1.—Femora black.....  | 2.                         |
| Femora yellow.....  | <i>flavipes</i> Stein.     |
| 2.—Palpi black.....   | 3.                         |
| Palpi reddish or yellowish.....   | 7.                         |
| 3.—Apical tarsal segments black.....  | 4.                         |
| Fourth segment of anterior tarsi reddish yellow.....  | <i>kowarzi</i> Becker.     |
| 4.—Abdomen shining black, with white spots.....   | <i>nivalis</i> Wiedemann.  |
| Abdomen pale pollinose, with black spots.....   | 5.                         |
| 5.—Antennae reaching only a little below the middle of the face.....  | <i>candicans</i> Kowarz.   |
| Antennae reaching almost to the vibrissae.....  | 6.                         |
| 6.—Front tibiae with a bristle near the middle; second segment of the anterior tarsi of the male with a small tubercle..... | <i>tubercularis</i> Stein. |
| Front tibiae without bristle; anterior tarsi simple.....  | <i>armipes</i> Becker.     |
| 7.—Fourth vein strongly curved forward apically.....  | 8.                         |
| Fourth vein straight or slightly curved.....  | 12.                        |

- 8.—Middle tibiae with two bristles near the middle. . . . . 9.  
 Middle tibiae with only one bristle near the middle. . . . . 10.
- 9.—First segment of the posterior tarsi long haired; posterior femora without ventral bristles. . . . . *cilitarsis* Loew.  
 Posterior tarsi without long hair; posterior femora with a median and preapical anteroventral bristle. . . . . *longicollis* Meigen.
- 10.—Middle femora with long hair ventrally on basal half. . . . . *nuba* Wiedemann.  
 Middle femora with short bristles or two very long ones below. . . . . 11.
- 11.—Middle femora with short bristles below. . . . . *modesta* Stein.  
 Middle femora with two very long, stout bristles below. . . . . *barbipes* Stein.
- 12.—Two equally long and strong presutural dorsocentrals. . . . . 13.  
 One long and strong presutural or two or three weak ones. . . . . 17.
- 13.—Parafacials with a strong bristle below. . . . . *miochaeta* Speiser.  
 Parafacials without strong bristle below. . . . . 14.
- 14.—Middle tibiae with a single bristle in addition to the apical ones. . . . . 15.  
 Middle tibiae with two bristles in addition to the apical ones. . . . . 16.
- 15.—Parafacials with a row of fine, short bristles. . . . . *biseta* Stein.  
 Parafacials with ordinary hair. . . . . *nana* Macquart.
- 16.—Abdomen with paired spots above; parafrontals brownish yellow. *ambigua* Stein.  
 Abdomen without paired dorsal spots; parafrontals gray. . . . . *surda*, n. sp.
- 17.—Abdomen shining black, with roundish white spots on the basal half of the segments; tibiae black. . . . . *maculata* Stein.  
 Abdomen either with a continuous broad cinereous vitta laterally or cinereous with blackish markings. . . . . 18.
- 18.—Frontal vitta reaching the anterior border of the front. . . . . 19.  
 Frontal vitta not nearly reaching the anterior border of the front; parafrontals broadly shining black above. . . . . *irvingi*, n. sp.
- 19.—Middle tibiae with two bristles in addition to the apical ones. *dichaeta* Stein.  
 Middle tibiae with a median, posterior bristle. . . . . 20.
- 20.—Abdomen with a broad brown vitta below the sides of the dorsum.  
 . . . . . *leucospila* Wiedemann.  
 Abdomen with the under surface cinereous. . . . . *afra*, n. sp.

### **Lispe flavipes** Stein

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 542.

Described from Cape Colony. I have not seen the species but it should be readily recognized by its reddish-yellow femora.

### **Lispe kowarzi** Becker

BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 116.

I have no African specimens before me but there are four from Formosa, named by Stein, in the Museum collection.

### **Lispe nivalis** Wiedemann

WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 659.

*Lispe lineata* MACQUART, 1838, 'Hist. Nat. Isl. Canar.,' II, pt. 13, p. 116 (Canary Islands).

*Lispe elephantina* BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 117 (Egypt).

Two males and four females, East London, S. Africa, November 18, 1923 and February 27, 1925; two males and one female, Bedford, S. Africa, February 7, 1925; male, Middleburg, S. Africa, February 13, 1925; female, Uitenhage, S. Africa, March 11, 1919; male, Barberton, Transvaal, October 7, 1919; male and two females, Pretoria, Transvaal, December 22, 1912 and December 16, 1913 (H. K. Munro); male, Bloemfontein, Orange River Province, May 23, 1920 (H. E. Irving); male, Balla Balla, S. Rhodesia, May, 1931; two males, three females, Lomagundi, S. Rhodesia, July 11, 1932 (A. Cuthbertson).

***Lispe candicans* Kowarz**

KOWARZ, 1892, Wien. Ent. Zeitz., XI, p. 36 (Europe).

BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 112 (Egypt).

Stein has reported the species from Mozambique but I have seen no specimens from Africa.

***Lispe tuberculitarsis* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 546.

Described from East Africa and Natal.

***Lispe armipes* Becker**

BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 118 (Egypt).

Male and female, East London, S. Africa, February 26, 1925 (H. K. Munro).

***Lispe cilitarsis* Loew**

LOEW, 1856, 'Neue Beitr.,' IV, p. 49.

Two males, Bloemfontein, May 23, 1920; male, Vryburg, South Africa, September 7, 1920 (H. E. Irving); male, Uitenhage, South Africa, March 3, 1919 (H. K. Munro).

Loew described the species from Egypt.

***Lispe longicollis* Meigen**

MEIGEN, 1826, Syst. Besch. Eur. Dipt., V, p. 225 (Europe).

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 548.

This European species was reported from Cape Colony by Stein.

***Lispe nuba* Wiedemann**

WIEDEMANN, 1830, Ausser. Zweifl., II, p. 444.

*Lispe dissimilis* MACQUART, 1850, Dipt. Exot., Suppl. IV, p. 264 (Egypt).

*Lispe dissimilis* BECKER, 1904, Zeits., Ent. Breslau, XXIX, p. 15.

CURRAN, 1928, Bull. Amer. Mus. Nat. Hist., LVII, p. 352.

Three males and a female from the Belgian Congo.

**Lispe barbipes** Stein

STEIN, 1908, Denkschr. Med. Nat. Ges., p. 171.

A single male, Bloemfontein, May 23, 1920 (H. E. Irving).

**Lispe modesta** Stein

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 551.

Described from Dembelsee. I have not seen this form.

**Lispe miochaeta** Speiser

SPEISER, 1910, 'Kil-Meru Exp.,' X, p. 164.

I have not seen this species, described from East Africa.

**Lispe surda**, new species

Related to *ambigua* Stein but distinguished in both sexes by the absence of brown dorsal spots on the abdomen. Length, 7 mm.

MALE.—Head black, cinereous pollinose, vertex and frontal triangle with brownish tinge; interfrontalia appearing black from dorsal view, brownish from in front. Six pairs of frontals, the upper two reclinate; parafrontals with a row of short hairs and with a second row anteriorly; ocellars and outer verticals long. Cheeks a little less than one-third as wide as the eye-height. Parafacials wide, haired on the whole surface. Palpi yellow, white pollinose, very broad on the apical half. Antennae black, the apex of the second segment red, white pollinose; third segment but little longer than the elongate second; arista with moderately long black rays.

Thorax black, greenish-gray pollinose, the disc of the mesonotum and a triangle on the mesopleura brownish; scutellum greenish gray with the disc more or less brown. Acrosticals, anterior intra-alar and prealar bristles absent; dorsocentrals 2-2; sternopleurals arranged in a triangle, the lower sides of which are about equal.

Coxae and femora black, gray pollinose; tibiae reddish; tarsi blackish with the basal segment almost wholly reddish. Posterior trochanters with the apical surface densely clothed with short, rather coarse, appressed black setulae; anteroventral and posteroventral surfaces of the middle femora each with four black bristles on the basal half, the posterior femora with about seven on the basal two-thirds of these surfaces and with several long bristly hairs at the base. Anterior tibiae with only apical bristles, the median pair with an anterodorsal and posterodorsal bristle beyond the middle; posterior tibiae with a long posterior bristle beyond the middle. Tarsi simple.

Wings cinereous hyaline, yellowish basally; fourth vein not curved apically. Squamae whitish, with yellow border. Halteres yellow.

Abdomen black in ground color, gray pollinose, on the dorsum with a greenish tinge in the middle, without paired spots on the dorsum, the under surface with an incomplete, broad, pale brownish vitta on either side, interrupted at the segmental sutures. Hair black. Fifth sternite with a broad V-shaped apical emargination; posterior forceps reddish.

FEMALE.—Parafrontals inclined to be blackish anteriorly; two pairs of the frontal bristles weak. Palpi less broadened. Mesonotum inclined to be vittate. Posterior trochanters simple; middle femora with four short posteroventral bristles



and a long, fine basal one, the anteroventral bristles absent; posterior femora without bristles ventrally but with four or five long, bristly hairs on the anterior surface at the base, one of them ventral.

**TYPES.**—Holotype, male, allotype, female, and one paratype, female, Bloemfontein, Orange River Province, May 30, 1920 (H. E. Irving). The types will be returned to Mr. H. K. Munro.

This species has the posterior trochanters much more extensively setose than in *ambigua* and the emargination of the fifth sternite is evidently larger. In *ambigua* the segments each bear a pair of elongate, subshining brown spots dorsally and a darker, lateral row of spots on the sides of the under side.

***Lispe ambigua* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 545.

A single male, Addis Abbaba, Abyssinia, August 12, 1920 (B. Brown).

The specimen has the base of the fourth sternite conically produced forward in the middle, but whether the character is a normal development or not can only be determined by the examination of a series of specimens. The posterior trochanters are densely black setose below and the abdomen bears on the upper part of the lower surface a row of broad brownish spots.

***Lispe biseta* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 543.

Described from East Africa.

***Lispe nana* Macquart**

MACQUART, 1835, 'Hist. Nat. Dipt.', II, p. 314 (Europe).

BECKER, 1904, Zeitschr. Ent. Breslau, XXIX, p. 32.

Female, Pretoria, Transvaal, February 27, 1915 (H. K. Munro).

***Lispe maculata* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 547 (Rhodesia).

Male, Barberton, Transvaal, May 23, 1913 (H. K. Munro); female, Balla Balla, S. Rhodesia, March, 1931 (A. Cuthbertson); three females, Addis Abbaba, Abyssinia, July 18, and August 31, 1920 (B. Brown).

***Lispe leucospila* Wiedemann**

*Coenosia leucospila* WIEDEMANN, 1830 Ausser. Zweifl., II, p. 441 (E. Indies).

*Lispa pectinipes* BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 113 (Egypt).

*Lispa lateralis* STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 70 (Delagoa Bay).

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 549.

Male, New Hanover, Natal, December 1, 1914 (C. B. Hardenberg); sixteen males and twenty-one females, Barberton, Transvaal, May 5, 15, 17, 21 and 22, 1913; two males, Pretoria, Transvaal, May 13, 1917

(H. K. Munro); male, Rustenburg, Transvaal, January 18, 1921 (collector ?); female, Hartley, S. Rhodesia, November, 1930, (collector ?); male, Salisbury, S. Rhodesia, September, 1929; female, Balla Balla, S. Rhodesia, March, 1931 (A. Cuthbertson).

***Lispe irvingi*, new species**

Related to *leucospila* Wiedemann but the posterior tibiae bear long, fine hairs on most of the length of the ventral surface instead of on only the apical half. Length. 6 mm.

MALE.—Head black in ground color; occiput and cheeks cinereous; face and parafrontals rather golden brownish yellow, the parafrontals broadly shining above. Front opaque black, the narrow, incomplete frontal triangle brownish yellow; six pairs of frontals, the upper two reclinate, the ocellars and outer verticals strong; parafrontals very narrow, with a row of four or five short hairs on the upper half and few finer ones on the anterior third. Cheeks scarcely one-fifth as wide as the eye-height. Parafacials narrow, slightly widening below and above, with a single row of black setulae. Palpi reddish yellow, of moderate width, with short black hairs on the outer surface. Antennae black, the apex of the second segment and narrow base of the third reddish; third segment almost twice as long as the second; arista moderately long plumose.

Thorax black, the mesonotum and mesopleura yellowish-brown pollinose, the pleura cinereous; scutellum brown with the sides cinereous. Dorsocentrals 1-4, the anterior two pairs of postsuturals short and weak; sternopleurals 1-2.

Legs black, the tibiae reddish on the posterior four legs, the front legs missing; femora and coxae cinereous pollinose. Middle femora with an entire row of short, fine posteroventral bristles which become dense just before the apex and with a row of similar bristles on the anteroventral surface which are shorter and finer on the apical sixth, the anterior surface with an outstanding bristle before the middle; posterior femora with a row of about six fine, anteroventral bristles on the basal half and fine, erect hair basally on the posterior and posteroventral surfaces. Middle tibiae with a posterior bristle near the basal third; posterior tibiae with a row of long hairs on the apical two-thirds of the anteroventral surface and two or three rows on at least the apical three-fourths of the posteroventral surface. Tarsi simple, the basal segment of the middle pair except the apex, and the basal half of the second and third segments, reddish.

Wings cinereous hyaline; fourth vein not curved forward. Squamae white, the lower lobe with pale yellowish border. Halteres reddish yellow.

Abdomen cinereous, the dorsum with blackish-brown markings. First segment with an oval, longitudinally placed median brown spot which unites with a broad, incomplete basal fascia; second segment with a pair of anteriorly united brown triangles which occupy most of the segment and are concave on the oblique anterior border; third segment with similar brown markings; fourth segment with a broad median vitta which widens and joins a posterior fascia, brown. Under surface cinereous except the posterior border of the fourth segment. Genitalia shining black. Hair black; segments each with a median lateral bristle.

TYPE.—Male, Bloemfontein, Orange River Province, May 30, 1920 (H. E. Irving); returned to Mr. H. K. Munro.

This species is slender and bears a strong superficial resemblance to *leucospila* Wiedemann. I have not seen the female but it will no doubt be easily recognized by the entire absence of the brown vittae on the under side of the abdomen. The anterior tibiae probably bear a posterior bristle near the middle as is the case in *leucospila*.

***Lispe dichæta* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 544.

Stein described this species from Natal but it is not among the rich South African material before me.

***Lispe afra*, new species**

Scutellum black in the middle except at the extreme base; abdomen with blackish spots on second and third segments and large spot on the fourth; palpi moderately broad, yellowish. Length, 6.5 mm.

FEMALE.—Head black, cinereous white pollinose; front black, the orbits cinereous, frontal triangle pale brown, narrow, reaching the anterior border of the front; the interfrontalia appearing brown from anterior view; seven pairs of frontals, the upper two reclinate; parafrontals narrow, with a row of very short, fine hairs on the anterior half and a second row on the anterior fourth. Cheeks scarcely one-fifth as wide as the eye-height. Parafacials moderately narrow, with scattered fine black hairs. Palpi reddish yellow, moderately widened apically, the outer surface with coarse black hairs, the apex with two or three bristles. Antennae black; apex of second segment reddish, white pollinose; third segment decidedly longer than the second; arista moderately long plumose on the basal three-fifths.

Thorax cinereous pollinose, with five brownish vittae, the median one wide and reaching the scutellum obscurely, the scutellum brown with a large cinereous triangle on either side. Prescutellar acrostical bristles weak; dorsocentrals 1-4, the anterior two pairs of postsuturals short; sternopleurals 1-2.

Legs blackish, cinereous pollinose; posterior four tibiae and the anterior pair on the basal fourth or more, reddish. Middle femora with a row of short, rather fine anterior bristles on the basal fourth and with a strong posterodorsal bristle at the apical fifth in addition to the usual preapical; posterior femora with an anteroventral bristle near the middle and with an entire anterodorsal row. Anterior tibiae with a strong posterior bristle at the middle, the middle tibiae with a strong posterodorsal bristle before the middle; posterior tibiae with one anterodorsal and one anteroventral bristle. Tarsi simple.

Wings cinereous hyaline; fourth vein not curved apically. Squamae white with yellow border. Halteres reddish yellow.

Abdomen cinereous; second and third segments each with a very large, subshining brownish black spot leaving a median vitta and the base toward either side, cinereous, the apex of the third segment also broadly cinereous; fourth segment with a much smaller pair of spots which are only obscurely divided by a median vitta and do not extend so strongly toward the lateral margins. Hair black, each segment with a lateral discal.

TYPE.—Female, Vryburg, S. Africa, September 4, 1920 (H. E. Irving); returned to Mr. H. K. Munro.

## CATALOGUE AND SYNONYMY

- cochlearia* BECKER, 1904, Zeitschr. Ent., Breslau, XXIX, p. 32 (Egypt).  
*desjardinsii* MACQUART, 1850, Dipt. Exot., Suppl., IV, p. 264 (Mauritius).  
*dissimilis* MACQUART = *nuba* WIEDEMANN.  
*elephantina* BECKER = *nivalis* WIEDEMANN.  
*halophora* BECKER, 1903, Mitt. Zool. Mus. Berl., II, p. 116 (Egypt).  
*hirtibasis* BIGOT, 1884, Ann. Soc. Ent. France, p. 292 (Cape).  
*hottentota* BIGOT, 1884, Ann. Soc. Ent. France, p. 293 (Cape).  
*hirtitarsis* STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 197 (Reunion and Bourbon).  
*hottentota* BIGOT = *hirtibasis* BIGOT.  
*lateralis* STEIN = *leucospila* WIEDEMANN.  
*leucocephala* LOEW, 1856, Neue Beitrage, IV, p. 49 (Egypt).  
*leucosticta* STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 198 (Madagascar).  
*lineata* MACQUART = *nivalis* WIEDEMANN.  
*maculifrons* MACQUART = *pygmaea* FALLÉN.  
*neo* MALLOCH, 1922, Ann. Mag. Nat. Hist., X, p. 390 (Ashanti, Gambia).  
*niveimaculata* STEIN. See *Xenolispa*.  
*ochracea* BECKER, Denkschr. Akad. Wien., LXXI, p. 150 (Africa). I could not locate this description: the reference is from Stein's 'Catalogue.'  
*pectinipes* BECKER = *leucospila* WIEDEMANN.  
*pennitarsis* STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 198.  
*pygmaea* FALLÉN, 1825, Musc., p. 94 (Europe).  
(*Hylemyia*) *maculifrons* MACQUART, 1851, Dipt. Exot. Suppl., IV, p. 265 (Egypt).  
*metatarsalis* THOMSON, 1868, Eugenes Resa, Dipt., p. 562.  
*remipes* BECKER, 1913, Wien. Ent. Ztg., XXXII, p. 126 (Africa).  
*rigida* BECKER, 1903, Mitt. Zool. Mus. Berlin, II, p. 115 (Egypt).  
*scalaris* LOEW, 1847, Stett. Ent. Ztg., VIII, p. 28 (Africa).  
*Sernotata* MACQUART, 1843, Dipt. Exot., II, part 3, p. 167 (Bourbon).  
*simonyi* BECKER, 1910, Denksch. Akad. Wien., LXXI, p. 151. (See note under *ochracea* in catalogue.)  
*spinipes* BIGOT. See *Limnophora*.  
*tentacula* DEGEER, 1776, (Musca), 'Ins.,' VI, p. 86 (Europe).  
*tibialis* MACQUART, 1843, 'Dipt. Exot.,' II, part 3, p. 166 (Canaries).  
*tibialis* MACQUART = *tentacula* DEGEER.

**XENOLISPA MALLOCH**

MALLOCH, 1922, Ann. Mag. Nat. Hist., X, p. 391.

This genus was established for four Asiatic species, no genotype being named. The genus is distinguished from *Lispe* by the presence of only a single pair of dorsocentral bristles situated immediately in front of the scutellum. *Coenosia pumila* Wiedemann may be taken as the genotype.

**Xenolispa niveimaculata Stein**

*Lispa niveimaculata* STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 68 (E. Africa).  
*Lispa niveimaculata* STEIN, 1913, Ann. Mus. Nat. Hung., XVI, p. 548 (Natal).



Male, Chirinda Forest, S. Rhodesia, November, 1930 (A. Cuthbertson); male, Paiata, Liberia, October, 1926; male and female, Du River Camp No. 3, Liberia (J. Bequaert).

#### DIMORPHIA MALLOCH

MALLOCH, 1922, Ann. Mag. Nat. Hist., IX, p. 273. (Type *Cyrtoneura flavicornis* MACQUART.)

The key which follows contains all the species recorded from Africa.

#### TABLE OF SPECIES

- 1.—Antennae and palpi wholly yellowish or reddish.....2.  
At least the third antennal segment mostly black.....4.
- 2.—Fourth wing vein strongly curved forward apically and ending only a little behind the wing-tip.....3.  
Fourth vein only gently curved forward and ending far behind the wing-tip.  
*latifrons* Malloch.
- 3.—Mesonotum yellow, with one or three black vittae.....*setulosa* Stein.  
Mesonotum dark in ground color, cinereous yellow pollinose, with four more or less distinct olivaceous vittae.....*flavicornis* Macquart.
- 4.—Palpi black or brown, the bases sometimes paler.....5.  
Palpi wholly reddish.....*subpunctata* Walker.
- 5.—Abdomen yellow, a median vitta and disc of third and fourth segments blackish in ground color; pleura yellow.....*tristis* Wiedemann.  
Abdomen blackish in ground color, the first and second segments sometimes partly yellow.....6.
- 6.—Pleura mostly yellowish.....*fusciventris* Malloch.  
Pleura wholly blackish.....7.
- 7.—Humeri reddish yellow.....*humeralis*, new species.  
Humeri black in ground color.....8.
- 8.—Mesonotum rather thinly pollinose, the outer black vittae very broad.  
*obscura*, new species.  
Thorax densely cinereous pollinose, the vittae narrow.....*thoracica*, new species.

#### *Dimorphia setulosa* Stein

*Mydaea setulosa* STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 192 (Natal).

*Dimorphia flavithorax* MALLOCH, 1922, Ann. Mag. Nat. Hist., IX, p. 274 (Natal).

*Dimorphia flavithorax* MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 108 (British E. Africa).

Two males, East London, Cape Province, May 12, 1923 and June 26 1924; female, Barberton, Transvaal, October 8, 1919 (H. K. Munro); female, Port Alfred, Cape Province, January, 1918 (R. O. Wahl); female, Vumba, S. Rhodesia, Nov., 1932.

The female from Vumba has a black mesonotal vitta as in the males.

#### *Dimorphia flavicornis* Macquart .

*Cyrtoneura flavicornis* MACQUART, 1843, Dipt. Exot., II, pt. 3, p. 156 (Mauritius).

*Spilogaster translucens* STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 48 (Madagascar).

*Mydaea flavicornis* STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 501 (E. Africa).

*Mydaea ochrocera* STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 501 (Mauritius).

MALLOCH, 1922, Ann. Mag. Nat. Hist., IX, p. 273.

MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 108.

Male and female, Barberton, Transvaal, May 20, 1914 and October 5, 1919 (H. K. Munro); female, New Hanover, Natal, November 16, 1914 (C. B. Hardenberg); male, Victoria Falls, August 30, 1920 (H. E. Irving); four males, Bindura, S. Rhodesia, March, 1932; two males and 3 females, Salisbury, S. Rhodesia, August, 1929, May 9, 1932 and September 20, 1932; male and female, Balla Balla, S. Rhodesia, March, May, 1931; female, Lomagundi, S. Rhodesia, August 12, 1932 (A. Cuthbertson); female, Salisbury, S. Rhodesia, September, 1929; male, Chirinda Forest, S. Rhodesia, November, 1930 (A. Cuthbertson).

#### ***Dimorphia subpunctata* Walker**

*Anthomyia subpunctata* WALKER, 1856, Dipt. Saunders, p. 353.

*Spilogaster latevittata* BIGOT, 1884, Ann. Soc. Ent. France, p. 286.

*Mydaea latevittata* STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 46.

*Mydaea subpunctata* STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 500.

*Dimorphia tristis* MALLOCH, 1922, Ann. Mag. Nat. Hist., IX, p. 273.

*Dimorphia tristis* MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 108.

Male and female, Port Shepstone, Natal, August 18, 23, 1920; two males, East London, Cape Province, May 5, 1923 and April 26, 1924 (H. K. Munro).

#### ***Dimorphia tristis* Wiedemann**

*Anthomyia tristis* WIEDEMANN, 1830, Ausser. Zweifl II, p. 423 (Cape).

*Dimorphia nigricornis* MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 108.

Male, New Hanover, Natal, December 1, 1914 (C. B. Hardenberg).

Wiedemann's type came from "Cape," while Malloch described *nigricornis* from Natal, Portuguese East Africa and Kenya. Wiedemann's type is before me and does not agree with specimens usually placed as *tristis* but does agree with *nigricornis* of Malloch. Malloch followed Stein in considering *subpunctata* Walker a synonym of *tristis*. *D. subpunctata* is larger, has a more strongly vittate mesonotum and mostly reddish palpi, the ends sometimes being brownish. The antennae are missing in the type of *tristis* but they were evidently reddish basally.

#### ***Dimorphia fusciventris* Malloch**

MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 109.

The sex of the type of this species is not stated in the original description. Described from Kenya. It is unknown to me.

***Dimorphia humeralis*, new species**

Black, the basal antennal segments, humeri and tibiae reddish. Length, 6.5 to 7.5 mm.

**FEMALE.**—Head black, thickly cinereous pollinose, the parafacials and parafrontals somewhat silvery. Front wide, the vitta black; ocellar triangle extending to the middle of the front; four or five pairs of frontals, the upper two reclinate, the anterior pair strong; ocellars long and strong; outer verticals half the length of the verticals; occipital hair black. Palpi black. Antennae brown, the two basal segments reddish.

Thorax black, the humeri reddish; pollen moderately thick, cinereous except on the disc of the mesonotum behind the suture where it is yellowish brown. Vittae brownish, narrow, the outer pair interrupted at the suture and curved toward the humeri in front. Two pairs of strong and one or two pairs of weak postsutural dorsocentrals; posterior lower sternopleural widely separated from the upper one. Scutellum reddish brown with the sides more reddish, the pollen grayish brown.

Legs black; apices of the femora, broadly below, the tibiae and the basal two tarsal segments reddish. Anterior tibiae with posterior bristle near the middle.

Wings with strong brown tinge; third vein sometimes with one or two setulae below in addition to those on the stem. Squamae yellowish with darker border. Halteres yellow with the knob somewhat brownish.

Abdomen wholly black, very thinly cinereous pollinose.

**TYPES.**—Holotype, female, and paratypes, two females, Tiko, Mt. Cameroon, Nigeria, September 1–5, 1935 (Dr. F. Zumpt). Type in Institut für Schiffs- und Tropenkrankheiten, Hamburg.

***Dimorphia obscura*, new species**

Black, the legs partly reddish, the tip of the fourth segment of the female yellowish. Length, 8 mm.

**FEMALE.**—Head and appendages black; face and occiput thickly cinereous white pollinose; parafrontals less thickly pollinose, the frontal vitta dull black, the triangle with a grayish sheen, reaching to the anterior fourth of the front. Eight pairs of frontals, the upper two reclinate, the anterior pair long and strong; ocellars long. Hair wholly black.

Thorax wholly black in ground color, covered with rather thin cinereous pollen; mesonotum brown pollinose between the dorsocentral black vittae, the outer black vittae much broadened behind the suture so that they reach to the lateral margins. Four pairs of postsutural dorsocentrals. Scutellum brown pollinose with the free border broadly grayish.

Legs black; apices, and apical fifth of the femora on their under surface, reddish; tibiae narrowly reddish basally and at the tips.

Wings with strong brownish tinge; first vein setulose for a short distance beyond the humeral crossvein; stem of second vein setulose on almost its whole length. Squamae pale brownish. Halteres yellow.

Abdomen shining black, thinly covered with cinereous pollen. Tip of fourth segment yellow. Genital lamellae reddish.

**TYPES.**—Holotype, female, and paratype, female, Mannsquelle, Mt. Cameroon, November 13, 1935 (Dr. F. Zumpt). Type in Institut für Schiffs- und Tropenkrankheiten, Hamburg.

**Dimorphia thoracica**, new species

Black, the legs mostly reddish; abdomen of male pale orange on basal half; thorax thickly pollinose. Length, 5.5 to 8 mm.

MALE.—Head black, white pollinose, the occiput cinereous or cinereous white. Front twice as wide as the ocellar triangle, the vitta blackish, narrower than parafrontal on the upper half; six or seven pairs of frontals and two or three pairs of bristly hairs above; ocellars long; verticals very weakly differentiated. Occipital hair black. Facial ridges obscurely reddish. Palpi and antennae black; second antennal segment reddish above.

Thorax black, thickly cinereous pollinose, the free border of the scutellum reddish except at the apex. Dorsocentral vittae very narrow and black in front of the suture, wider and brown behind, outer vittae represented by two blackish spots on each side. Three pairs of postsutural dorsocentrals; sternopleurals 1-2.

Legs blackish; apical fourth of posterior four femora and broad apex of the front pair, the tibiae, basal two tarsal segments and the trochanters, reddish.

Wings cinereous hyaline, often with brownish tinge; stem of second vein with two or three setulae below. Squamae and halteres yellow.

First two abdominal segments pale orange, the base of the first, a more or less distinct spot on the middle and the median fourth of the second black in ground color; third and fourth segments black with thick cinereous pollen, the apex of the fourth broadly reddish. Second and third segments each with a pair of broadly separated rather small, roundish brown spots on the posterior half. Genitalia dull reddish.

FEMALE.—Front wide, with six to eight pairs of frontals, the upper two reclinate, the anterior pair long and strong, a pair on the middle of the front sometimes long, the reclinate bristles stout. Verticals and outer verticals long. Outer mesonotal vittae a little more pronounced; free border of the scutellum sometimes all reddish; posterior four femora usually almost all reddish. Abdomen all blackish in ground color and thickly cinereous pollinose, rarely with large yellowish spots on the first segment; paired brown spots much larger than in the male; apex of fourth segment usually more broadly reddish; genital lamellae reddish.

TYPES.—Holotype, male, allotype, female, and paratypes, four males and ten females, Misellele, September 21, 1935, one female, Ekona, October 11, 1935 and female, Tiko, September 25-30, 1935, all on Mt. Cameroon, Nigeria (Dr. F. Zumpt). Type in Institut für Schiffs-und Tropenkrankheiten, Hamburg.

## LIST OF SPECIES NOT SEEN AND SYNONYMS

*flavithorax* MALLOCH = *setulosa* STEIN.

*latevittata* BIGOT = *subpunctata* WALKER.

*latifrons* MALLOCH, 1929, Ann. Mag. Nat. Hist., IV, p. 106 (f) (Nyasaland).

*nigricornis* MALLOCH = *tristis* WIEDEMANN.

*ochrocera* STEIN = *flavicornis* MACQUART.

*translucens* STEIN = *flavicornis* MACQUART.

*tristis* MALLOCH = *subpunctata* WALKER.

## ANACLYSTA STEIN

STEIN, 1918, Arch. für Naturg., LXXXIII, Abt. A, Heft 1, p. 138.

No genotype was named for this genus which is apparently a com-



posite group. *Limnophora piliceps* Stein may be considered the type of the genus. It has the eyes densely pilose. All the species have a strong ventral bristle on the middle tibiae beyond the middle. The following table separates the African species placed in the genus by Stein.

## TABLE OF SPECIES

1.—Eyes pilose.....	<i>piliceps</i> Stein.
Eyes bare.....	2.
2.—Palpi yellow.....	<i>flavescens</i> Stein.
Palpi black.....	<i>multipunctata</i> Stein.

**Anaclysta piliceps** Stein

*Limnophora piliceps* STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 514.

Male, Addis Abbaba, Abyssinia, August 31, 1920 (B. Brown). The type series was also from Abyssinia.

Stein described only the female. The male differs considerably from Stein's description.

MALE.—Head black, cinereous pollinose, the parafacials and parafrontals rather silvery. Front wider than the ocellar triangle, widening anteriorly; frontal vitta black, appearing brownish gray from in front; seven or eight pairs of frontals on the anterior three-fifths, the upper ones weak; ocellars long. Cheeks about one-fifth as wide as the eye-height, rather thickly haired. Parafacials of equal width throughout. Palpi and antennae black, the arista pubescent, thickened on the basal fourth. Eyes with thick brownish cinereous pile.

Thorax cinereous pollinose, the mesonotum subshining brown with cinereous markings. Broad lateral margins in front of the wings a pair of broad presutural vittae, the anterior border, a pair of very broad vittae on the posterior third of the mesonotum and a broad stripe above the wings cinereous. Scutellum brown with the apex and sublateral vittae cinereous. Dorsocentrals 2-4; anterior intra-alar absent; prealar absent; prescutellar acrosticals scarcely developed, the acrostical hairs not in rows; two pairs of marginal scutellars, the sides of the scutellum haired on the upper half; sternopleurals 1-2; prosternum, propleura, pteropleura and hypopleura bare.

Legs black, the coxae and femora with cinereous pollen; middle femora with a row of four or five ventral bristles toward the posterior surface on the basal half; posterior femora with a row of anteroventral bristles, the basal ones fine and shorter than those toward the apex, and with a row of fine posteroventral bristles on the basal half. Anterior tibiae with a posterior bristle near the middle, the apex somewhat swollen and bearing a cluster of long, fine hairs on the apical sixth posteriorly; middle tibiae with two posterior bristles and a strong ventral one near the apical third; posterior tibiae with two anterodorsal, anteroventral and posteroventral bristles.

Wings hyaline; fourth vein ending conspicuously before the tip of the wing; third vein bare. Squamae pale yellowish brown. Halteres yellow.

Abdomen black in ground color, densely cinereous pollinose on the apical half, the sides of the second segment broadly yellow in ground color and pale pollinose. First segment opaque black, with a median cinereous vitta. Second segment opaque

black with the sides very broadly, rectangularly produced inwardly on the basal half and a triangular median vitta, cinereous pollinose. Third segment cinereous with a pair of rather small, basal triangles in the middle and large, oval posterior spot toward either side, dull black; fourth segment cinereous with only the sublateral posterior spots opaque black. Venter blackish with rather thick cinereous pollen. Hair wholly black; basal sternite black haired.

In the female the black pattern on the second abdominal segment is broken into four spots and the mesonotum is cinereous with brown vittae.

**Anaclysta flavescens** Stein

*Limnophora flavescens* STEIN, 1903, Mitt. Zool. Mus. Berl., II, p. 106.

I have not seen this species which was described from Egypt.

**Anaclysta multipunctata** Stein

*Limnophora multipunctata* STEIN, 1903, Mitt. Zool. Mus. Berlin, II, p. 107.

*Limnophora pellucida* STEIN, 1906, Mitt. Zool., Mus. Berlin, IV, p. 101.

Stein described *multipunctata* from Egypt and *pellucida* from the Canary Islands. The species is unknown to me.

SYNONYMY

*Anaclysta pellucida* STEIN = *multipunctata* STEIN.



